Chemical Name Active Ingredient	Application Rate (tsp/gal)	Spray or Drench?	Mobility	Product Cost	IRAC MoA Group	Scale	Mealybugs	Thrips	Whiteflies	Aphids	Mites	Cater- pillars	Fungus Ghats
Commonly Available Pesticides													
Bayer Products	6 @ 1.47%	Spray	Xylem		4A	Х	Х	suppression	Х	Х	if fluvalinate		
Imidacloprid varies	12 @ 0.74%	Drench	Mobile		4/	X	*	suppression	X	^	present		
Cygon 2E	1 - 2	Spray	Xylem		1B	Х	Х	Х		х	х		
Dimethoate 23%	1 - 2	Opray	Mobile		טו	^	^	^		^	^		
Malathion 50% EC	1 - 4	Spray	Contact		1	Х	Х	Х	Х	Х			
Malathion 50% EC	1 - 4	Оргау	Contact		,	^	^	^	^	^			
Orthene Powder	1	Spray	Locally		1	х	х	Х	х	Х			
Acephate 97%	'	Drench	Systemic		'	^	^	^	^	^			
Orthenex	6	Spray	Locally		1	х	х	Х	Х	х	suppression		
Acephate, Fenbutatin oxide	· ·	Оргау	Systemic		'	^	^	^	^	^	оприсосии		
Permetrol	1.3	Spray	Contact		3	Х	х	х	Х	x	x		
Permethrin 10%	1.0	Оргау	Contact		· ·	^	^	Α	^	^	^		
Ultra Pure Oil	6 - 7.5	Spray	Contact		16	Х	Х	Х	Х		x		
Paraffinic Oil	0 7.0	, ,	Oomaoi		10	^	^		^		^		
Thuricide	7.5	Spray	Contact		11							Х	х
Bacillus Thuringensis 1		Drench	Contact		''							-	^
Specialty Pesticion	les				Ť								
Akari 5 SC	0.96 - 1.4	Spray	Spray Contact	\$145 / quart	21A		suppression		suppression		all mites but		
Fenpyroximate 5%	0.00 1.1	Opiay								<u> </u>	Tenuipalpidae		
Aria	Spray	prav Locally	\$150 /	9C	Х	x	х	x	x				
Flonicamid 50%		Opiay	Systemic	160 g		^							
Avid 0.15 EC	0.24-mites	Spray	Locally	\$93 /	6			suppression	suppression	suppression	all 4 groups of		
Abamectin 2.0%	0.48-thrips	Opiay	Systemic	cup							mites		
Conserve	0.6-thrips	Spray	Locally	\$144 /	5			Х				Х	
Spinosad 11.6%	1.2-mites	Opiay	Systemic	quart									
Decathlon 20 WP	0.18-0.27	Spray	Contact	\$90 /	3	crawler stage	Х	Х	Х	Х		Х	Х
Cyfluthrin 20%	0.10 0.21			cup		3							
Flagship 25 WG	0.5 - 1	Spray	Xylem	\$145 / 8	4A	Х	Х	Х	Х	Х		Х	Х
Thiamethoxam 25%	0.0	Drench	Mobile	wt oz	., ,	^			^	^			^
Floramite SC	0.24 - 0.48 Spra	48 Spray C	ray Contact	\$97 /	25						spider mites		
Bifenazate 22.6%	5.2. 5.16	. ,		quart							'		
Kontos	.1 - 0.2 Spray Drench	Drench mobile		le 250 ml	23	crawler stage	Х	suppression	х	х	all mites but		
spirotetramat 22.4%											Tenuipalpidae		
Marathon II	0.10	Spray	Xylem	\$110 /	4A	Х	Х	suppression	Х	Х			
Imidacloprid 21.4%	1 0	Drench	Mobile	250 ml			•	· · ·	-				

Chemical Name Active Ingredient	Application Rate (tsp/gal)	Spray or Drench?	Mobility	Product Cost	IRAC MoA Group	Scale	Mealybugs	Thrips	Whiteflies	Aphids	Mites	Cater- pillars	Fungus Ghats
Specialty Pesticion	Specialty Pesticides (continued)												
Marathon 60 WP Imidacloprid 60%	0.16	Spray Drench	Xylem Mobile	\$53 / 100 gm	4A	Х	Х	suppression	х	х			
Mavrik Aqua Flow Fluvalinate 22.3%	0.24 - 0.6	Spray	Contact	\$115 / quart	3		Х	Х	Х	Х	suppression	Х	
Merit 75 WP Imidacloprid 75%	0.06	Spray Drench	Xylem Mobile	\$35 / 2 wt oz	4A	Х	Х		Х	Х			
Overture 35 WP Pyridalyl 35%	2.1	Spray	Locally Systemic	\$107 / 1 lb	Unknown			Х				Х	
Safari 20 SG Dinotefuran 20%	0.5 - 1 1.5 - 3.0	Spray Drench	Xylem Mobile	\$115 / 1.5 cups	4A	x	Х	suppression	x	suppression			
Sanmite 75 WP Pyridaben 75%	1 - 1.5	Spray	Contact	\$110 / 4 wt oz	21A				Х		all mites but Eriophyid		
Shuttle Acequinocyl 15.8%	0.38 - 0.77	Spray	Contact	\$140 / quart	20B						all mites but Tarsonemid		
Sirocco Bifenazate 43.2%, Aba	0.18 - 0.36	Spray	Locally Systemic	\$190 / cup	0, unclassifie			suppression	suppression	suppression	all mites but Tenuipalpidae		
Sultan Cyflumetofen 18.7%	0.82	Spray	Contact	\$162 / quart	25						spider mites		
Talstar P Bifenthrin 7.9%	0.65 - 1.3	Spray	Contact	\$45 / 3 quarts	3	crawler stage	х	Х	Х	Х	spider mites, broad mites		Х
Tristar 8.5 SL Acetamiprid 8.5%	0.5-0.8 scale 0.75-1.5 thrip	Spray	Locally Systemic	\$45 / 4 fl oz	4A	Х	х	Х	Х	Х			Х
Insect Growth Re	Insect Growth Regulators												
AzaGuard, Azatin X Azadirachtin 3%	0.5 - 2	Spray	Contact	quart	unclassified	Х	X	Х	Х	х		Х	use as drench
Distance Pyriproxygen 11.23%	0.48 - 0.72	Spray	Locally Systemic	\$260 / quart	7C	Х	suppression		Х	suppression			use as drench
Enstar AQ Kinoprene 18.4%	1 - 2	Spray	Contact	\$135 / quart	7C	х	Х	х	х	х			use as drench
TetraSan 5 WDG Etoxazole 5%	0.84 - 1.7	Spray	Locally Systemic	\$130/lb	8						spider mites, Tenuipalpidae		

Chemical Name Active Ingredient	Application Rate (tsp/gal)	Spray or Drench?	Mobility	Product Cost	IRAC MoA Group	Comments and Caveats - Always Check Product Label for Information on Proper Use and Precautions				
Commonly Available Pesticides										
Bayer Products	6 @ 1.47%	Spray	Xylem		4A	Many products of differing imidacloprid strengths, some contain fluvinate. Do not use				
Imidacloprid varies	12 @ 0.74%	Drench	Mobile		7/1	with summer oil. Use with weak fertilizer to enhance uptake.				
Cygon 2E	jon 2E 1 - 2 S		Xylem		1B	Not labeled for use on orchids, some growers have reported severe phytotoxicity after				
Dimethoate 23%	1 - 2	Spray	Mobile			use. Use in cool weather only. Not for use on tolumnias.				
Malathion 50% EC	1 - 4	Spray	Contact		1	Harms some ferns.				
Malathion 50% EC	1 - 4	Opray	Contact		'					
Orthene Powder	1	Spray	Locally		1	Repeat at 2 week intervals if crawlers continuously appearing. Apply no more than 3				
Acephate 97%	ı	Drench	Systemic		!	times consecutively. Can be mixed with fungicide.				
Orthenex	6	Spray	Locally		1	Fenbutatin oxide is a miticide, Acephate is an insecticide. Same additional comments as				
Acephate, Fenbutatin oxide	O	Spray	Systemic			for Orthene above.				
Permetrol	1.3	Spray	Contact		3					
Permethrin 10%	1.3	Spray	Contact							
Ultra Pure Oil	6 - 7.5	Chrov	Contact		16	Use only if temperatures below 90°F. Don't apply within 30 days of using sulfur or mix				
Paraffinic Oil	0 - 7.5	Spray Contac			10	with fungicide, copper or Captan. Don't apply to ferns or palms.				
Thuricide	7.5	Spray	Contact		11					
Bacillus Thuringensis 1	7.5	Drench								
Specialty Pesticid	les									
Akari 5 SC	0.96 - 1.4	Corov	Contact	\$145 /	21A	Primarily active on larval stages, no translaminar activity.				
Fenpyroximate 5%	0.90 - 1.4	Spray		quart	ZIA	Thinany active on larval stages, no translaminal activity.				
Aria		Spray	Locally	\$150 / 160 g	9C					
Flonicamid 50%		Spray	Systemic							
Avid 0.15 EC	0.24-mites	Spray	Spray	Locally	\$93 /	6	Harms some ferns and shasta daisies. Use weekly for 3 weeks when thrips immature then			
Abamectin 2.0%	0.48-thrips	Spray	Systemic	cup	0	alternate. Residual control may be enhanced by adding summer oil.				
Conserve	0.6-thrips	Spray	Locally	\$144 /	5	Can be used 3 times consecutively on one generation of thrips then alternate. Can spray				
Spinosad 11.6%	1.2-mites	Spray	Systemic	quart		flowers for thrips without damage.				
Decathlon 20 WP	0.18-0.27	Spray	Contact	\$90 /	3					
Cyfluthrin 20%	0.10-0.21	Spray	Contact	cup	3					
Flagship 25 WG	0.5 - 1	Spray	Xylem	\$145 / 8	4A	Effective for armored scale, not soft scale				
Thiamethoxam 25%	0.5 - 1	Drench	Mobile wt oz		4A	Effective for armored scale, not soft scale.				
Floramite SC	0.24 - 0.48 Spray		Contact	\$97 /	25	Alternate use with other miticides, does not control broad mites or flat mites. Spray				
Bifenazate 22.6%	0.24 - 0.48	Spray	Contact	quart	25	should have a pH below 7.				
Kontos	1 0 2	O 2 Spray		Spray	Spray	Amphi-	\$170 /	23	I abol save it is not recommended for use on erchide, among other crops	
spirotetramat 22.4%	.1 - 0.2 Drench		mobile	250 ml	۷۵	Label says it is not recommended for use on orchids, among other crops.				
Marathon II	0.10	Spray	Xylem	\$110 /	4A	Apply to cattleyas only, no dendrobiums and no thin leafed orchids. Do not use with summer oil.				
Imidacloprid 21.4%	0.10	Drench	Mobile	250 ml	4A	Use with weak fertilizer to enhance uptake.				

Chemical Name	Application	Spray or	Mobility	Product	IRAC MoA	Comments and Caveats - Always Check Product Label for Information on Proper Use				
Active Ingredient	Active Ingredient Rate (tsp/gal)		Wiodility	Cost	Group	and Precautions				
Specialty Pesticides (continued)										
Marathon 60 WP	0.16 Spray		Xylem	\$53 /	4A	Apply to cattleyas only, no dendrobiums and no thin leafed orchids. Do not use with summer oil.				
Imidacloprid 60%	0.10	Drench	Mobile	100 gm	7/1	Use with weak fertilizer to enhance uptake.				
Mavrik Aqua Flow	0.24 - 0.6 Spray		Contact	\$115 /	3	At low to medium use rates, controls aphids, thrips, whiteflies, leaf-feeding caterpillars; at				
Fluvalinate 22.3%	0.24 0.0			quart		higher rates, mites will also be suppressed or controlled.				
Merit 75 WP	0.06 Spray		Xylem	\$35 / 2	4A	See Marathon comments; Merit is 3 times stronger and the same application rate is				
Imidacloprid 75%	0.00	Drench	Mobile	wt oz	7/1	listed, my results suggest it is phytotoxic at this application rate.				
Overture 35 WP	2.1	Spray	Locally	\$107 / 1	Unknown	Translaminar, controls insects by both contact and ingestion activity, although contact				
Pyridalyl 35%			Systemic	lb	011111111111	activity is dominant and faster than ingested activity				
Safari 20 SG	0.5 - 1	Spray	ch Mobile 1.5 cups		4A	Use spreader sticker to increase effectiveness.				
Dinotefuran 20%	1.5 - 3.0	Drench			17 \	Ose spreader stroker to increase effectiveness.				
Sanmite 75 WP	1 - 1.5	Spray	Contact	\$110 / 4	21A	Alternate use with other miticides.				
Pyridaben 75%		Opiay	Comac	wt oz						
Shuttle	0.38 - 0.77 Spray		Contact	\$140 /	20B	Do not tank mix with Aliette or surfactant				
Acequinocyl 15.8%	0.00	٠,٠.٠)		quart						
Sirocco	0.18 - 0.36 Spray		Locally Systemic	\$190 /	b, unclassifie	Not compatible with many products in tank mixes, check label.				
Bifenazate 43.2%, Aba		, io old opiny		cup	d	, ,				
Sultan	0.82	Spray	Contact	\$162 /	25					
Cyflumetofen 18.7%	0.02			quart						
Talstar P	0.65 - 1.3 Spray		Contact	\$45/3	3	Mite control most effective in spring to early summer. Treat late in day. Thorough				
Bifenthrin 7.9%		' '		quarts		coverage necessary.				
	0.5-0.8 scale Spray		,	\$45 / 4 fl	4A	Use higher rate when insect populations high. Do not apply more than 5 times per year.				
	0.75-1.5 thrip	' '	Systemic	OZ		Systemic with translaminar, not labeled for drench applications.				
Insect Growth Re	gulators	1		* 454./						
AzaGuard, Azatin 2	0.5 - 2	Spray	Contact	\$151 /	unclassified	Controls insects in the larval, pupal, and nymphal stages, tank mix with chemicals for				
Azadirachtin 3%	htin 3%			quart		adult control. Keep solution pH between 5.5 and 6.5.				
Distance	0.48 - 0.72	8 - 0.72 Spray	Spray Locally	\$260 /	/(:	Harms some ferns.				
Pyriproxygen 11.23%	 		Systemic	quart	_					
Enstar AQ	1 - 2 Spra		Contact	\$135 /	7C					
Kinoprene 18.4%		' '		quart						
TetraSan 5 WDG	DG 0.84 - 1.7 Spray		Locally	\$130/lb	8	Kills mite eggs and nymphs but not adult, apply with adulticide if infested, treated adult				
Etoxazole 5%		- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1-	Systemic	1		mites will not produce viable eggs. Translaminar.				